



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,830	05/03/2001	Steven M. Zuniga	2834/303002	9467

26185 7590 06/04/2007  
FISH & RICHARDSON P.C.  
P.O. BOX 1022  
MINNEAPOLIS, MN 55440-1022

EXAMINER
----------

CULBERT, ROBERTS P

ART UNIT	PAPER NUMBER
----------	--------------

1763

MAIL DATE	DELIVERY MODE
-----------	---------------

06/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/848,830	<b>Applicant(s)</b> ZUNIGA ET AL.	
	<b>Examiner</b> Roberts Culbert	<b>Art Unit</b> 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1763

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/1/06 has been entered.

### ***Inventorship***

Receipt is acknowledged of the statement requesting that Lawrence Rosenberg be deleted as a named inventor which was filed with the request for continued examination under 37 CFR 1.114 on 11/1/06. The inventorship has been corrected as requested.

### ***Response to Amendment***

The declaration filed on 11/1/06 under 37 CFR 1.131 is sufficient to overcome the Vote reference (U.S. Patent No. 6,068,548).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-3, 5, 8, 9 12-15, 17, 20, 21 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0747167 A2 to Shendon et al.**

Art Unit: 1763

Regarding Claims 1 and 13, Shendon et al. teaches a carrier head for a chemical mechanical polishing apparatus, comprising: a rigid base; a substrate mounting surface that is vertically movable relative to the base; and a retaining ring to maintain a substrate beneath the mounting surface during polishing, the retaining ring including a substantially annular lower portion (162) having a bottom surface for contacting a polishing pad during polishing, wherein the lower portion is made of an engineering plastic (Delrin), and a substantially annular upper portion (148) having a bottom surface joined to the lower portion and a top surface fixed to and abutting the base, wherein the upper lower portion is made of a metal which is more rigid than the plastic. (Col. 10, Lines 20-46)

Regarding Claims 2, 3, 14, 15 and 25, the plastic (Delrin) is substantially inert to a chemical mechanical polishing process and has a durometer measurement between about 80 and 95 on the shore D scale.

Regarding Claims 5 and 17 the upper portion is thicker than the lower portion. See figure 4.

Regarding Claims 8, 9, 20 and 21 Shendon teach the metal material may be aluminum which has an elastic modulus about ten to one hundred times the elastic modulus of Delrin plastic.

Regarding Claims 12 and 24, Shendon et al. teach the lower portion may be press fit. (Col. 11, Lines 17-21)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1763

**Claims 4, 6, 7, 10, 11, 16, 18, 19, 22, 23 and 25-30 are rejected under 35 U.S.C.**

**103(a) as being unpatentable over EP 0747167 A2 to Shendon et al.**

Regarding Claims 4, 16, 25, 26, 29 and 30, as applied above, Shendon et al. teaches the method of the invention substantially as claimed, but does not expressly teach that the lower portion is between about 100 and 400 mils thick.

However, the dimensions of the lower portion would have been selected within the recited range by one of ordinary skill in the art as a matter of providing suitable thickness for a substrate to be polished without deforming the flexible ring during a polishing process. Further, it has been held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. *See In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Regarding Claims 6, 7, 18, 19, 27 and 28 Shendon et al. does not expressly teach the plastic is selected from the group consisting of polyphenylene sulfide, polyethylene terephthalate, polyetheretherketone, and polybutylene terephthalate.

However, Shendon teaches using "Delrin or similar plastic material". However, Delrin is a well known engineering plastic having high chemical, friction and wear resistance. (See applicant's specification page 12) Thus it would have been obvious to select from the well-known engineering plastics such as polyphenylene sulfide, polyethylene terephthalate, polyetheretherketone, and polybutylene terephthalate since the engineering materials have similar chemical resistance, friction and wear properties suitable for polishing

Regarding Claims 10, 11, 22 and 23 and 25 Shendon et al. does not expressly teach the lower portion is adhesively attached to the upper portion with an epoxy. However, Official Notice is taken by the examiner that epoxy adhesive is a well-known expedient in the art of bonding plastic to metals. Since, Shendon et al. teach that the perimeter ring may be mounted by

Art Unit: 1763

alternative means without screws, (Col. 11, Lines 15-20) it would have been obvious to one of ordinary skill in the art at the time of invention to use an epoxy to bond the plastic and metal portions in order to provide suitable attachment of a the metal and plastic materials as an alternative to screw attachment.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



R. Culbert  
Examiner  
Art Unit 1763